

REMARKS¹

In the outstanding Office Action, the Examiner rejected claims 13-16 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,753,228 to Azam et al. ("Azam"); and rejected claims 17-23 under 35 U.S.C. § 103(a) as being unpatentable over Azam.

By this amendment, Applicant has amended claim 13. Claims 13-23 remain pending in this application.

I. Rejection under 35 U.S.C. § 102(e)

Applicant respectfully traverses the Examiner's rejection of claims 13-16 under 35 U.S.C. § 102(e). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference ... [t]he identical invention must be shown in as complete detail as is contained in the . . . claim." MPEP § 2131 8th Ed. (Rev. 4), October, 2005 (internal citations omitted).

Azam cannot anticipate claim 13, because Azam fails to teach a combination including at least "[forming] the trench gate ... after forming the LDD region," and "[forming] the source/drain regions ... after forming the LDD region," as recited in claim 13 (emphasis added). The Examiner asserts that "Azam discloses ... forming an LDD region 49 using an ion implantation in a substrate ... forming a trench gate 17 by depositing and planarizing a second insulating layer 39 and a conductor on the

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement of characterization in the Office Action.

substrate ... forming source/drain regions 47 by performing an ion implantation on the substrate." Azam, however, teaches:

FIG. 3 schematically illustrates the portion of transistor 10 shown in FIG. 2 at a subsequent manufacturing stage ... [a] layer 32 of the gate material is applied to completely fill the remainder of opening 14 ... layer 32 ... is removed leaving gate material within and preferably filling, the opening through mask 31 and filling the remainder of opening 14 to form gate 17 (col. 3, lines 34-45, emphasis added);

FIG. 6 schematically illustrates the portion of transistor 10 shown in FIG. 5 at a subsequent manufacturing stage ... a body mask that defines a body contact area is used to form a body contact region 47 on surface 20 and extending into substrate 15 (col. 5, lines 3-17, emphasis added);

and

FIG. 8 schematically illustrates the portion of transistor 10 shown in FIG. 7 at a subsequent manufacturing stage ... differential oxide mask of oxide 48 and the second portion of layer 41 is used while dopants from the solid dopant source are diffused to form source 49 (col. 5, lines 45-46, emphasis added, and col. 6, lines 8-10).

That is, Azam teaches forming gate 17, then forming body contact region 47, then forming source 49. Accordingly, to the extent that source 49, gate 17, and body contact region 47 of can reasonably correspond to Applicant's claimed "LDD region," "trench gate," and "source/drain regions," as asserted by the Examiner, Azam fails to teach that gate 17 and body contact region 47 are formed after source 49. Azam thus fails to teach "[forming] the trench gate ... after forming the LDD region," and "[forming] the source/drain regions ... after forming the LDD region," as recited in claim 13 (emphasis added).

Because Azam fails to teach each and every element recited in claim 13, Azam cannot anticipate claim 13. Accordingly, claim 13 is allowable over Azam, and claims

14-16 are allowable at least because of their dependence from claim 13. Applicant therefore respectfully requests that the Examiner withdraw the rejection of claims 13-16 under 35 U.S.C. § 102(e).

II. Rejection under 35 U.S.C. § 103(a)

Applicant traverses the rejection of claims 17-23 under 35 U.S.C. § 103(a) because a *prima facie* case of obviousness has not been established. To establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), each of three requirements must be met. First, the reference or references, taken alone or combined, must teach or suggest each and every element recited in the claims. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. Third, a reasonable expectation of success must exist. Moreover, each of the three requirements must “be found in the prior art, and not be based on applicant’s disclosure.” See MPEP § 2143, 8th Ed. (Rev. 4), October, 2005. At a minimum, the Examiner has failed to establish a *prima facie* case of obviousness because the references, whether taken alone or in combination, fail to teach or suggest each and every element of the claims.

Claims 17-23 depend from claim 13, and thus require all of the elements recited in claim 13. As discussed above, Azam fails to teach or suggest a combination including at least “[forming] the trench gate … after forming the LDD region,” and “[forming] the source/drain regions … after forming the LDD region,” as recited in claim 13, and required by claims 17-23. Accordingly, a *prima facie* case of obviousness has not been established with respect to claims 17-23. Applicant therefore respectfully

requests that the Examiner withdraw the rejection of claims 17-23 under 35 U.S.C. § 103(a).

Applicant respectfully requests the reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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